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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,572	11/17/2003	Ann C. Irvine	030064	4718

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QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

LAUTURE, JOSEPH J

ART UNIT	PAPER NUMBER
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2819

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/16/2007.

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Office Action Summary

Application No.

10/715,572

Applicant(s)

IRVINE ET AL.

Examiner

Joseph Lauture

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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DETAILED ACTION

Response to Arguments

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25, 27 and 29 are rejected under 35 U.S.C 102(b) as being anticipated by Ribas-Corbera et al (US 2002/0122598).

Regarding claim 25, Ribas-Corbera et al teach in figures (4) and (5) an encoding method for generating compressed data based on quantized transform coefficients of the data, the method comprising: accessing an inventory of blocks/layers (See step 34) ordered from smallest energy to largest energy (energy distribution) of the quantized transform coefficients; and, extracting with the use of an encoder a selected number of layers/blocks (the non-discarded blocks) to generate the compressed data.

Regarding claim 27, Ribas-Corbera et al teach in figures (4) and (5) an encoding apparatus for generating compressed data based on quantized transform coefficients of the data, the apparatus comprising: means for accessing an inventory of blocks/layers

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(See step 34) ordered from smallest energy to largest energy (energy distribution) of the quantized transform coefficients; and, an encoder used to extract a selected number of layers/blocks (the non-discarded blocks) to generate the compressed data.

Regarding claim 29, Ribas-Corbera et al teach in figure (10) an encoding apparatus for generating compressed data based on quantized transform coefficients of the data, the apparatus comprising: an inherent storage medium to hold digital video frames (11), the frames comprising multiple blocks/layers based on energy distribution of the quantized coefficients (See figures 4 and 5); a selection module (70) coupled to the storage medium and configured to extract a number of layers/blocks from the inventory and pass them on to an encoder (78) that generate the compressed data.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 12 and 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujii et al (US 2002/0099853) in view of Ribas-Corbera et al (US 2002/0122598).

Regarding claim 1, Tsujii et al teach in figure (1) a data compression method comprising: generating transform coefficients from input data using a Discrete Wavelet Converter (2); quantizing the transform coefficients using a quantizer (3); grouping the

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transform coefficients into layers (See paragraph [0027]; See figure 16); and, entropy coding layers of the data coefficients using an entropy coder (4).

Tsujii et al do not teach generating an energy distribution of the quantized transform coefficients and grouping the transform coefficients into layers based on the energy distribution. Ribas-Corbera et al teach in figure (4) a digital video encoding method that includes: generating an energy distribution of quantized transform coefficients at step (32); and, at step (34), grouping the transform coefficients based on their energy distribution. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Tsujii et al and of Ribas-Corbera et al to achieve a compression method having improved reliability and performance because that would help to prevent buffer overflow (See paragraph [0015]).

Regarding claim 12, Tsujii et al teach in figure (1) a data compression apparatus and method comprising: generating transform coefficients from input data using a Discrete Wavelet Converter (2); quantizing the transform coefficients using a quantizer (3); grouping the transform coefficients into layers (See paragraph [0027]; See figure 16); and, entropy coding layers of the data coefficients using an entropy coder (4).

Tsujii et al do not teach generating an energy distribution of the quantized transform coefficients and grouping the transform coefficients into layers based on the energy distribution. Ribas-Corbera et al teach in figure (4) a digital video encoding method that includes: generating an energy distribution of quantized transform

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coefficients at step (32); and, at step (34), grouping the transform coefficients based on their energy distribution. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Tsujii et al and of Ribas-Corbera et al to achieve a compression method having improved reliability and performance because that would help to prevent buffer overflow (See paragraph [0015]).

Regarding claim 22, Tsujii et al teach in figure (1) a data compression apparatus comprising: a Discrete Wavelet Converter (2) for generating transform coefficients from input data; a quantizer (3) for quantizing the transform coefficients; grouping the transform coefficients into layers (See paragraph [0027]; See figure 16); and, entropy coding layers of the data coefficients using an entropy coder (4).

Tsujii et al do not teach generating an energy distribution of the quantized transform coefficients and grouping the transform coefficients into layers based on the energy distribution. Ribas-Corbera et al teach in figure (4) a digital video encoding method that includes: generating an energy distribution of quantized transform coefficients at step (32); and, at step (34), grouping the transform coefficients based on their energy distribution. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Tsujii et al and of Ribas-Corbera et al to achieve a compression method having improved reliability and performance because that would help to prevent buffer overflow (See paragraph [0015]).

Regarding claims 2-11, 13-21, 23, 24, 26, 28 and 30, Ribas-Corbera et al teach in figures (1) and (4) a video encoding method that includes: grouping blocks of transform coefficients made of various numbers of bits including nibbles and crumbs into layers in an order of significance, i.e. according to their energy distribution (See step 34 of figure (4)), wherein the quantized transform coefficients are arranged prior to generating the energy distribution (See step 34 of figure (4)); and encoding subsequent layers to generate further compressed data, wherein the layers are sequentially extracted for compression. Although Ribas-Corbera et al teach a DCT coding technique, they do not specifically teach an entropy coder that codes various layers of the data. Tsujii et al teach in figure (1) a data compression method including an entropy coder (4) to code layers of quantized transform coefficients. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Tsujii et al and of Ribas-Corbera et al to achieve a compression method having improved reliability and performance because that would help to prevent buffer overflow (See paragraph [0015]). It would have been further obvious to include memory elements anywhere in the circuit to hold data for further processing.

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CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Lauture, whose telephone number is (571) 272-1805. The examiner can normally be reached Monday to Friday between 9:30 am and 6:00 PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached at (571) 272-7492. The fax number for the organization to which this application is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free). For assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph Lauture
Art Unit: 2819
Date: 04/04/2007


REXFORD BARNIE
SUPERVISORY PATENT EXAMINER

04/09/07